

CLAIMS

1. A system for use in supplying power to an electrical device fitted with power couplings for use in establishing contact with a first power source and a second power source
5 in a normal operational state, comprising:

an uninterruptible power supply in line between the second power source and the electrical device, the uninterruptible power supply not being in line between the first power supply and the electrical device;

10 a switch for permitting the electrical device to consume power from a member of the group consisting of the first power source, the second power source, and combinations thereof;

a first sense circuit for identifying a power failure condition in the first power source;

a second sense circuit for identifying a power failure condition in the second power source; and

a controller configured with control circuitry and logic and responsive to said first and second sense circuits to implement instructions to said switch for a plurality of operational states based upon a sensed power failure condition.

2. The system of claim 1, wherein the operational states include state selected from the group consisting of:

a first power source failure state occurring when the first sense circuit senses a power failure condition in the first power source and the second sense circuit does not sense a power failure condition in the second power source, whereupon the switch circuit selects the second power source to provide power to the electrical device;

25 a second power source failure state occurring when the second sense circuit senses a power failure in the second power source and the first sense circuit does not sense a power failure condition in the first power source, whereupon the switch selects the first power source to provide power to the electrical device and the uninterruptible power supply remains available to provide power if the
30 first sense circuit senses a future power failure condition in the first power supply; and

a dual source failure state occurring when the first sense circuit senses a power failure condition in the first power supply and the second sense circuit senses a power failure condition in the second power supply, whereupon the uninterruptible power supply provides power to the electrical device while the electrical device proceeds with an orderly shutdown; and combinations thereof.

3. The system as set forth in claim 2, wherein the uninterruptible power supply comprises means for providing a signal that notifies the controller of a power depletion condition in the uninterruptible power supply whenever the power depletion condition arises during the second power source failure state.

4. The system as set forth in claim 3, wherein the controller comprises means for responding to the signal by implementing an orderly shutdown of the electrical device.

5. The system as set forth in claim 1, wherein the controller includes logic for returning the system to the normal operational state in absence of the sensed power failure condition.

6. The system as set forth in claim 1, wherein the controller comprises distributed control circuitry and logic residing in the uninterruptible power supply and the electrical device.

7. A computer readable form use in adapting a system for use in supplying power to an electrical device fitted with power couplings for use in establishing contact with a first power source and a second power source in a normal operational state, where the system design includes:

an uninterruptible power supply in line between the second power source and the electrical device, the uninterruptible power supply not being in line between the first power supply and the electrical device;

a switch for permitting the electrical device to consume power from a member of the group consisting of the first power source, the second power source, and combinations thereof;

a first sense circuit for identifying a power failure condition in the first power source;

a second sense circuit for identifying a power failure condition in the second power

source; and

a controller;

the computer readable form comprising machine instructions for inducing a plurality of operational states based upon sensed power failure conditions.

8. The computer readable form of claim 7, wherein the machine instructions are operable for inducing:

a first power source failure state occurring when the first sense circuit senses a power failure condition in the first power source and the second sense circuit does not sense a power failure condition in the second power source, whereupon the switch selects the second power source to provide power to the electrical device,

a second power source failure state occurring when the second sense circuit senses a power failure in the second power source and the first sense circuit does not sense a power failure condition in the first power source, whereupon the switch circuit selects the first power source to provide power to the electrical device and the uninterruptible power supply remains available to provide power if the first sense circuit senses a future power failure condition in the first power supply; and

a dual source failure state occurring when the first sense circuit senses a power failure condition in the first power supply and the second sense circuit senses a power failure condition in the second power supply, whereupon the uninterruptible power supply provides power to the electrical device while the electrical device proceeds with an orderly shutdown.

9. The computer readable form as set forth in claim 7, comprising instructions for returning the system to the normal operational state in absence of the sensed power failure condition.

10. The computer readable form as set forth in claim 7, comprising instructions for distributed processing on control circuitry and logic residing in both the uninterruptible power supply and the electrical device.

11. The computer readable form as set forth in claim 7, comprising instructions for providing a signal that notifies the controller of a power depletion condition in the uninterruptible power supply whenever the power depletion condition arises during the second power source failure state.

12. The computer readable form as set forth in claim 11, comprising instructions for responding to the signal by implementing an orderly shutdown of the electrical device.

13. A method of operating a system in a plurality of operational states based upon sensed power failure conditions, where the system includes

an uninterruptible power supply in line between a second power source and an electrical device, the uninterruptible power supply not being in line between a first power supply and the electrical device;

a switch for permitting the electrical device to consume power from a member of the group consisting of the first power source, the second power source, and combinations thereof;

a first sense circuit for identifying a power failure condition in the first power source;

a second sense circuit for identifying a power failure condition in the second power source; and

a controller;

the method comprising the steps of

operating in a first power source failure state occurring when the first sense circuit senses a power failure condition in the first power source and the second sense circuit does not sense a power failure condition in the second power source, whereupon the switch selects the second power source to provide power to the electrical device,

operating in a second power source failure state occurring when the second sense circuit senses a power failure in the second power source and the first sense circuit does not sense a power failure condition in the first power source, whereupon the switch selects the first power source to provide power to the electrical device and the uninterruptible power supply remains available to provide power if the first sense circuit senses a future power failure condition in the first power supply; and

operating in a dual source failure state occurring when the first sense circuit senses a power failure condition in the first power supply and the second sense circuit senses a power failure condition in the second power supply, whereupon the uninterruptible power supply provides power to the electrical device while the electrical device proceeds with an orderly shutdown.